



Learning Design in the Aftermath of COVID-19: Lessons from Online and Hybrid Learning During the Pandemic

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Abstract. Various designs of online learning, such as full online and hybrid learning, were used during the COVID-19 pandemic. The pandemic has subsided, and the government has decided to implement offline education in schools and colleges. This study aims to analyze students' and lecturers' experiences with online and hybrid learning and to make recommendations for learning design in universities after the pandemic is over. This study employs a descriptive analysis design, with respondents from the State University of Semarang. A closed and open questionnaire administered via Google Form were used to collect data. Interviews were also used to gain a better understanding of the pandemic's impact on lecturers and students. The descriptive quantitative data analysis method was used. According to the findings, the majority of students and lecturers preferred offline learning and stated that they were willing to return to campus to study. During online and hybrid learning, many obstacles and challenges arise. Stress among students has skyrocketed. The main impediment to the smooth operation of lectures is the lack of online and hybrid learning options. Students, on the other hand, believe that lecturers can create a challenging lecture process for them. Blended learning is a possible alternative learning design. Face-to-face and online learning are combined and are complementary.

Keywords: COVID-19 pandemic · online learning · hybrid learning · face-to-face learning · blended learning

1 Introduction

The outbreak of the COVID-19 pandemic, which has resulted in global school closures, has highlighted the importance of virtual classrooms in supplementing physical classrooms. Teachers and students have no choice but to actively participate in online learning, despite the numerous challenges and obstacles that exist [1]. Learning takes place remotely and on digital platforms via the internet, with no physical interaction between teachers and students or among students themselves [2]. Learning innovations are still

being developed to support online learning [3]. Quality online learning can be delivered using video conferencing, web-based models, mobile models, social platforms, and other models [4]. Many higher education campuses and schools have developed learning management systems (LMS), which serve as the primary platform or support for online learning [5].

Previous studies have shown that online learning can be beneficial. Some participants found online remote learning useful for providing instant feedback, boosting motivation, and fostering a community of practice [6]. There is, however, a negative viewpoint associated with feelings of isolation, un-motivation, and a preference for face-to-face delivery (F2F). Engagement can have an impact on students' online learning in both positive and negative ways. During the pandemic, online learning is regarded as the best solution. Virtual classrooms allow educators to teach from home using tools that make online sessions more effective and efficient [7].

During the pandemic, online learning presents both challenges and opportunities for continuous development. Many countries are still in the early stages of implementing e-learning. Aside from the lack of an e-learning curriculum, adopting an e-learning teaching mode is a difficult task for both lecturers and students due to a lack of experience with information and communication technology and insufficient infrastructure to support e-learning [8]. Therefore, the readiness of educators and students to take advantage of features in online learning platforms is a determinant of e-learning success [9]. The use of online learning raises additional concerns and obstacles, such as teachers' ability to motivate students through layers and teachers' boredom [10]. Teachers must spend more time preparing media and learning materials [11].

Online learning, which was once a supplement to offline learning, has now become the sole learning platform. The developed LMS must also be evaluated to see if it is truly useful for learning or if it is still difficult for users to use. Because the Covid-19 case was sloping, online learning in universities shifted to a hybrid learning mode. Some students learn in the classroom, while others learn from home via video conferences. Hybrid learning can help with concept understanding and problem-solving [12]. Several studies suggest that synchronous hybrid learning, when compared to fully online or fully on-site instruction, creates a more flexible and engaging learning environment. This new study room, however, presents several pedagogical and technological challenges [13]. Because hybrid learning can combine the advantages of online and face-to-face learning, it can be used to improve learning activities [14]. During the COVID-19 pandemic, hybrid learning is the best option and alternative learning model to use [7].

In the case of Indonesia, online learning was also the only platform used during the pandemic, though hybrid learning was later used due to the development of COVID-19 cases. At the start of the pandemic, the Ministry of Education moved quickly to encourage the use of online learning to prevent the spread of COVID-19 cases. Teachers and students are expected to quickly adapt to the online learning mode. Schools and universities work hard to provide online learning infrastructure in order to continue to provide high-quality education. Teachers and lecturers are given specialized training in how to use online learning platforms. Universitas Negeri Semarang (UNNES) was also quick to respond to this policy. The ELENA (electronic learning aid) application, which began as a support platform, has evolved into the primary mode of online learning [5].

The existing features have been expanded and integrated with third-party platforms such as Google Classroom, Zoom Meeting, and Turnitin. As a result, lecturers and students can engage in appropriate online learning interactions. The hybrid policy implementation also continues to make use of the ELENA platform and Zoom meetings to create synchronous lecture interactions.

This study aims to reveal students' and lecturers' experiences during online and hybrid learning in order to recommend learning designs in the post-pandemic period. The ability of lecturers is deemed adequate for taking advantage of the features available at ELENA. During the Zoom meeting, the lecturer's ability to generate interaction should have improved. Similarly, students' ability and willingness to complete assignments and lecture activities provided.

2 Research Method

This is a descriptive study to reveal students' and lecturers' experiences with online and hybrid learning during the COVID-19 pandemic. Respondents for the study were students and lecturers at Universitas Negeri Semarang who were studying during the pandemic. This study involved 92 students and 9 lecturers in total. Data were collected using closed and open questionnaires distributed online via Google Forms between April and May 2022. The interview method was also used to reveal more in-depth experiences that lecturers and students had while participating in online and hybrid learning. The descriptive analysis method was used to analyze the data.

3 Result and Discussions

3.1 The Experiences of Online Learning During Pandemic Covid-19

The data for the study was gathered from 92 research participants. The distribution of respondents by degree program and semester is shown in Table 1. By 74%, or as many as 68 students, most of the respondents were Accounting Education students. According to semester, most of the respondents (44 students or 48%) are in semester 4 or the class of 2020.

Table 2 depicts student perceptions of various aspects of online and hybrid learning. Lecturers are considered competent in conducting online learning and hybrid learning based on their competence during lectures. The obtained score of 3.81 is considered competent. Students consider the learning process during the pandemic to be difficult. The average student opinion score is 3.64. Students can still enjoy the lecture process that the lecturer has created. This can be seen in student responses to assignments and projects assigned by lecturers. The average score is 3.70, placing it in the attractive category. Students can complete assignments and projects either individually or in groups. The level of stress during online and hybrid lectures, on the other hand, falls into the high category. Students face numerous challenges and obstacles as a result of their infrastructure and the online lecture model, which is quite different from previous lectures. Students also believe that the learning resources provided by the faculty are inadequate. This is demonstrated by issues with access to ELENA and other platforms. The use of Zoom

Table 1. Distribution of respondents

Description	Total	Percentage
<i>Degree Program</i>		
Office Administration Education	12	13%
Cooperation Education	12	13%
Accounting Education	68	74%
<i>Total</i>	92	100%
<i>Semester</i>		
II	26	28%
IV	44	48%
VI	22	16%
<i>Total</i>	92	100%

Table 2. Student’s perception about online and hybrid learning during COVID-19 pandemic

Items	Average score	
Lecturer competence in online learning or hybrid learning.	3.81	competence
The learning process in online learning or hybrid learning.	3.64	challenging
Assignments and/or projects in online learning or hybrid learning.	3.70	interesting
The level of stress experienced during online learning and/or hybrid learning.	3.89	high
In-class facility support in hybrid learning.	3.31	adequate

meetings and supporting facilities when implementing hybrid learning in the classroom is also insufficient. Cameras capable of capturing student and lecturer learning activities in class are not yet widely available.

Figure 1 depicts students’ perspectives on the implementation of online and hybrid learning during the pandemic. Students frequently express dissatisfaction with the learning process. Hybrid learning facilities are important but are still scarce, interfering with the lecture process. Furthermore, the lecture process designed by lecturers during hybrid learning is still unbalanced. The ability of lecturers to manage hybrid classes is still not optimal, and lecturers are thought to only focus on students in the class. Students in the Zoom meeting were not paying attention. Another student stated that ELENA access errors were still common, causing students to have difficulty completing activities at ELENA, particularly collecting assignments. Student perspectives on online and hybrid learning processes during the pandemic:

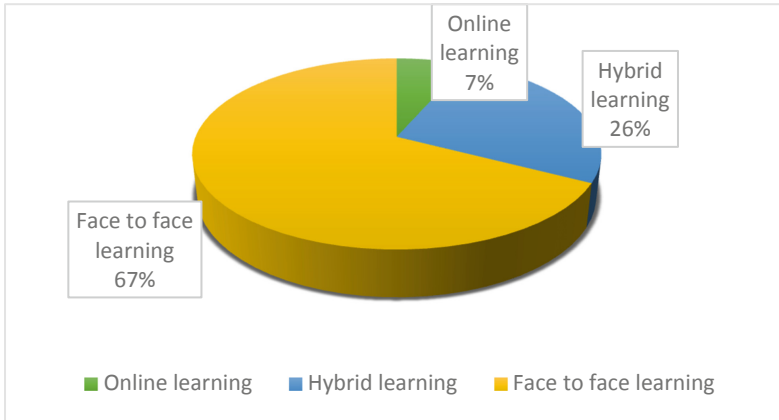


Fig. 1. Preference of learning forms by students

1. When giving hybrid lectures, perhaps it can be clarified again during the explanation. The issue is that online users are frequently perplexed because lecturers focus on hybrids.
2. Hopefully, the facilities for hybrid lectures will improve in the future; all rooms are equipped with adequate facilities. This saves time on technical setup and screen wiring.
3. Suggestions in hybrid lectures at the Faculty of Economics are inadequate facilities, resulting in an inefficient lecture process. Only a few classes have adequate facilities for hybrid lectures.
4. Please improve the facilities, particularly the air conditioning, and the camera facility in Zoom so that it leads to lecturers or the blackboard. Thank you so much.
5. Hopefully, in the future, ELENA will not have as many errors, allowing students to take attendance and submit assignments without difficulty.
6. Permission to give advice, if the conditions have begun to improve, it is preferable to carry out face-to-face learning as a whole in the following semester. If it has not improved, it can be implemented in a hybrid fashion with adequate facilities. If the facilities are inadequate, I believe it is preferable to do it online. Thank you very much.

Figure 1 depicts the learning models selected by students for the upcoming semester. Their decision was influenced by their prior learning experiences. In the future, most students prefer face-to-face learning to lecture. Face-to-face lectures are desired by as many as 67% of respondents, or 62 students. This is not surprising given that students frequently face challenges in online and hybrid learning. The use of internet quotas has increased dramatically, resulting in significant costs. Their devices must also support Zoom meetings or other video conferencing applications.

Interviews with lecturers at the Faculty of Economics, Universitas Negeri Semarang, revealed interesting findings that corroborated what students had experienced. Initially, lecturers' readiness to implement online and hybrid learning was quite limited. However, with the speed with which lecturers adapt, these issues can be properly addressed. Finally,

lecturers can take advantage of the various features available in ELENA, Zoom meetings, Google Meet, Microsoft Teams, and other supporting applications. Learning designs are becoming more diverse, challenging student participation and engagement during lectures. Many applications that can support online learning are now recognized by lecturers.

However, most lecturers want face-to-face learning to be implemented in the future. There are some things that cannot be replaced in online or hybrid learning modes. The interaction that is created is more akin to face-to-face learning. Face-to-face learning also promotes the formation of social values. Online learning is more flexible, according to professors. However, when learning online, value transfer cannot be maximized. Lecturers face issues similar to those raised by students in hybrid learning. It is difficult to divide attention between students in class and in Zoom meetings. Inadequate hybrid learning facilities are a barrier to the adoption of hybrid lectures.

3.2 The Learning Design Post Covid-19

Educators must also consider the post-pandemic learning strategy. Blended learning is an innovation that combines online learning with face-to-face learning [4]. Experience gained during online learning will be a valuable resource for educators looking to implement blended learning in the future. Teachers and lecturers will be able to create learning innovations by combining online and offline learning modes. In university lectures, blended learning can be practiced. A more interactive lecture approach will result from the combination of online and face-to-face learning. In the last eight years, UNNES has implemented e-learning (ELENA). In practice, however, few FE UNNES lecturers make good use of this feature to supplement classroom learning. Some of the reasons are that lecturers find it difficult to apply the various features in ELENA, that it takes a long time to use ELENA, and that lecturers find it easier and more practical to implement face-to-face learning.

Blended learning can be combined with other learning approaches such as problem-based learning (PBL), which is sometimes referred to as blended problem-based learning. This method is thought to be appropriate for accounting education. Students will solve various cases and problems that will challenge them to think from the most basic to the most advanced level. Previous researchers have successfully developed and implemented a hybrid of blended learning and face-to-face PBL. The technique is known as blended problem-based learning [15]. Other researchers discovered that, while not statistically significant, students' learning attitudes improved. He also discovered that the experimental class students had a better problem-solving attitude than the control class students, which was statistically significant [16]. Another discovery combines PBL with 3D virtual worlds to create a more complex and realistic learning environment for students [17]. Other studies have attempted to combine an online problem-based learning approach with games. The results show that learning becomes enjoyable and exciting, and that it is possible to meet the learning objectives that have been established [18].

Social media can also be used to help with the successful implementation of blended learning. YouTube, Instagram, WhatsApp, and Facebook are among the most popular social media platforms among students. Previous research has shown that YouTube is the most popular social media platform for students and lecturers to watch educational

videos. YouTube is frequently used as a learning resource and for student work publication [19]. In addition, studies have demonstrated the benefits of using WhatsApp, the most popular messaging platform in all circles, for learning purposes [20]. The use of social media includes learning media, learning resources, and so on. The group discussion feature in WhatsApp or Telegram will be used extensively. Similarly, the existence of features such as Facebook Live, Instagram TV, IG stories, and others. The interaction of students with lecturers and students with students will increase, and learning will become more enjoyable and exciting.

Previous studies have also revealed that students have a strong desire to use mobile learning [21]. Researchers can also create interactive and android-based learning media, as well as learning materials or resources that can be accessed from students' mobile phones. As a result, students will be able to learn whenever and wherever they want. The interactive media in question is information technology-based media that combines images, videos, sounds, and other elements. Android-based learning media is becoming more popular and will continue to be developed. In addition, researchers will create flip books to make access to learning modules easier.

4 Conclusions

The experiences of students and lecturers during online and hybrid learning indicate that face-to-face learning is a more desirable learning model. Although students believe that online and hybrid learning can be used during the pandemic, there are numerous obstacles and challenges. The level of stress rises. Lecturers who can adapt quickly are unable to create interactions in the ideal lecture process that are comparable to face-to-face lectures. Value transfer does not occur during online or hybrid learning. Blended learning is recommended for future lecture models. This means that face-to-face learning will continue to support and complement online learning. The availability of an LMS will continue to be useful. The ability to use e-learning will be in demand for lecturers and students in the future, not only during a pandemic. Blended learning can be combined with a variety of other learning strategies, such as problem-based learning, the use of social media, and others. Lectures will continue to be created interactively and can provide students with a challenging experience.

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